9. Air Quality

The use of charcoal was an important factor in the mines. …During May of 1885, Antonio Signoraster advertised for charcoal burners to burn 400 bushels of charcoal at 12 ½ cents a bushel…

Charcoal was made by digging a pit and piling wood in stacks on it. Then it was covered with earth and set on fire. All non-carbonaceous elements in the wood were passed off as vapors, some of the carbon was utilized as fuel, and the remaining carbon was converted into charcoal.

Charcoal yields a larger amount of heat in proportion to its volume than wood will yield. It has a further advantage of being smokeless. The burners controlled the burning process by the use of small vents in the earth covering. They judged the progress in burning by the color of the vapor passed off.

Las Calaveras, Quarterly Bulletin of the Calaveras County Historical Society, Volume 20, Number 4, July, 1972.

Requirements

Air Quality is an optional general plan element. However, because air quality must be addressed as part of the environmental review process pursuant to the California Environmental Quality Act (Public Resources Code Sections 21000) and Appendix G of the CEQA Guidelines[1], many local governments include a separate Air Quality Element as part of the general plan.

The Federal Clean Air Act (of 1970, amended 1990[2]) and the California Air Resources Board's California Air Pollution Control Laws (a.k.a. the "bluebook") establish the standards for air quality for the state and the nation. Jurisdictions that exceed established thresholds must prepare an Air Quality Management Plan detailing how that jurisdiction will reduce polluting air emissions as necessary to achieve adopted standards for air quality.

[1] Per Appendix G, a significant adverse impact is assumed to exist if a project will contribute to or result in the violation of any ambient air quality standards

[2] 42 United States Code 7401 *et seq.*; and 42 Code of Federal Regulations 50 *et seq.*

Background/Setting

Sources of Air Pollution in Angels Camp

Pollutants transported from the San Joaquin Valley and Bay Area are the primary contributors to degraded air quality within the city. Sources of air pollution in and around Angels Camp include: vehicles, traffic congestion, open burning, wood-burning stoves, grading/heavy construction equipment, control/prescriptive burns and wildland fires.

Air Quality Monitoring in Angels Camp

Angels Camp is located in the Mountain Counties Air Basin. The air quality monitoring station nearest Angels Camp is the California Air Resources Board's air quality monitoring station near San Andreas on Gold Strike Road. Based on data gathered from this station and other nearby stations, the city's air quality is affected by elevated levels of both ozone and particulate matter.

Non-Attainment Designations for Angels Camp

When a local jurisdiction exceeds state and/or federal standards for air emissions, that area may be designated as a non-attainment area by the regulatory agencies.

Calaveras County (and, by association, Angels Camp) has been designated by the State of California as being in non-attainment for:

- Ozone
- Particulate Matter (PM_{10})

Air Quality Plan for Angels Camp

This non-attainment designation requires the affected jurisdiction to prepare an Air Quality Plan addressing the reduction of the levels of the high-concentration pollutants. Failure to prepare an Air Quality Plan may result in the withholding of federal funding for transportation and other public utility improvement projects. The Calaveras County Air Pollution Control District anticipates that an Air Quality Plan addressing the reduction of ozone and particulate matter will be drafted for Calaveras County by approximately 2006 with state funding assistance. However, because the major source of the ozone and particulate matter in Calaveras County is transported from the San Joaquin Valley and Bay Area, proposed air pollution control programs within Calaveras County may achieve only limited success.

Ozone (O_3)

Ozone is created by a chemical reaction between hydrocarbons (i.e., volatile organic compounds, or VOCs) and nitrogen oxides (NO_X) in the presence of sunlight. Major sources of nitrogen oxides and hydrocarbons are combustion such as that found in factories and automobiles, gasoline vapors and the evaporation of solvents and fuels. Health effects of

ozone include eye irritation and damage to lung tissues. Ozone also damages various materials including plants resulting in damage to city landscaping projects, heritage trees and other vegetation.

The state and federal air quality standards for ozone are:

Table 9-1
State and Federal Ozone Standards

Pollutant	Averaging Time	Federal Primary Standard (parts per million)	State Standard (parts per million)
Ozone	1-hour	0.12 ppm	0.09 ppm

These ozone standards are being exceeded within the city and county at levels indicated in the following table.

Calaveras County, including Angels Camp, has experienced high ozone levels exceeding both state and federal standards an average of 12-13 days annually. Because ozone creation involves sunlight, high ozone readings normally occur during the warm months between June and mid-September.

Table 9-2
Number of Days per Year Calaveras County has Exceeded State and Federal Air Quality Standards for Ozone
(CARB San Andreas-Gold Strike Monitoring Station)

Year	Federal 8-hour Standard Exceeded	Federal 1-hour Standard Exceeded	State 1-hour Standard Exceeded
1994	34	0	35
1995	19	1	23
1996	18	3	24
1997	4	1	6
1998	28	1	27
1999	18	1	21
2000	17	1	16
2001	5	0	8

Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter (PM_{10} and $PM_{2.5}$), or respirable particulate matter (the numbers "10" and "2.5" reference particle sizes), is commonly generated by cars, trucks, fireplaces, woodstoves, windblown dust, roadway dust, agricultural dust and construction dust. Particulate matter also may be produced by incomplete combustion of any fuel and can be formed from other pollutants (e.g., acid rain, nitrogen oxides-NO_X, sulfur oxides-SO_X, organics). High levels of this pollutant have been linked to respiratory illnesses. In addition, particulate matter may reduce general visibility within the area and result in surface soiling.

Angels Camp and Calaveras County have exceeded PM_{10} levels per state standards as indicated in the following table:

Table 9-3
Number of Days per Year Calaveras County has Exceeded State Air Quality Standards for Particulate Matter (PM_{10})

Year	State Standard Exceeded # Days/Year
1994	0
1995	12
1996	0
1997	6
1998	0
1999	12
2000	0
2001	0

PM_{10} can originate from many sources, including dust and wildfires. For example, extensive wildfires occurred throughout Northern California in 1999, including a large wildfire in neighboring Tuolumne County (Groveland, Pilot Fire) - a likely contributor to increased PM_{10} levels recorded that year.

Other Pollutants

Other pollutants that can degrade air quality in and around Angels Camp include carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead. These pollutants are not currently considered a threat to the city's air quality.

GOALS, POLICIES AND IMPLEMENTATION PROGRAMS

Goal 9.A Maintain and improve air quality to ensure the health and safety of the city's residents and visitors and to maintain the area's quality of life.

Policies

9.A.1 Facilitate implementation of uniform, cost-effective and feasible standards for consistently and fairly mitigating air quality impacts resulting from development as prescribed by law**.**

9.A.2 Design, where feasible, public facilities that demonstrate best management practices aimed at maintaining and improving air quality and that can serve as models for the private sector.

9.A.3 Encourage and promote the development of walkable communities that incorporate the use of non-motorized methods of transportation, reduce traffic congestion, and reduce vehicle trips**.**

9.A.4 Encourage city residents to implement best management practices to maintain and improve air quality in their own neighborhoods.

9.A.5 Emphasize the reduction of air emissions generated from sources located within the City of Angels and under city control.

9.A.6 Coordinate local air quality programs with regional programs aimed at improving air quality.

Implementation Programs

9.A.a **Certified Unified Program Agency (CUPA)**

Continue to notify the local Certified Unified Program Agency (Calaveras County Environmental Health Department, or CUPA) of pending project proposals during the environmental review process. In particular, proposals involving hazardous materials, including those that may create hazardous air emissions, should be reviewed by CUPA.

9.A.b **Calaveras County Air Pollution Control District Authority to Construct**

Continue to notify the Calaveras County Air Pollution Control District of pending project proposals during the environmental review process. Continue to verify that project proponents have obtained an authority to construct permit from the Calaveras County Air Pollution Control District (APCD) addressing:

a. Potential project air emissions

b. Use of gravel in construction with appropriate asbestos content limits

c. Burning of construction debris

d. Other potential uses or project emissions as may be identified by the APCD

9.A.c **Encourage Installations of EPA-Certified Heating Devices**

Establish development standards that encourage installation of EPA-certified wood, oil, pellet or other heating devices for new development projects.

9.A.d **Establish Standards for Erosion and Dust Control**

Establish and adopt standards for erosion and dust control to be included as conditions of approval, conditions of site development or to be otherwise attached as requirements of entitlements issued by the city, as necessary to reduce dust and erosion during construction activities. Methods to be addressed include, but are not limited to:

a. Revegetating cut and fill slopes

b. Hydroseeding

c. Revegetation using native grasses

d. Use of on-site water trucks or similar devices during non-precipitation periods to control dust emissions and maintain water quality during demolitions, construction, or other dust-generating activities

e. Installation of erosion control devices (e.g., silt fences, hay bales) prior to the rainy season

f. Measures for protecting soil stability (See **Program 6Ak**)

g. Tire-washing stations for trucks leaving construction sites

Equivalent Programs: 1Ee (Land Use), 6Am (Safety), 11Ad (Community Identity)
Related Program: 6Ak (Safety)

9.A.e **Encourage Use of Energy-Conserving Designs, Materials and Equipment**

Promote residential and commercial construction design that incorporates active and passive solar heating, supplemental solar water heaters, energy efficient lighting, additional weather-stripping, green and heat reflecting roofs compatible with the city's visual character, additional insulation and similar energy-conserving features. Use of energy-conserving designs and materials also should be incorporated into additions and remodeling projects requiring a building permit. Use of energy-conserving construction equipment (e.g., biodiesel) also should be encouraged. Promote incentive programs for projects that incorporate these features at a level that contributes to the maintenance of the area's air quality.

Equivalent Program: 4Ba (Conservation and Open Space)
Related Program: 2Cl (Housing)

9.A.f **Encourage *Low-Impact Modes of Transportation***

Continue to designate land uses compatible with compact development patterns and incorporating sidewalk or trail systems that encourage access between residential, commercial, recreational and public facilities using *low-impact modes of transportatio*n [e.g., pedestrian, bicycle, *low-speed vehicles* (LSVs)]

Equivalent Programs: 1Dc (Land Use), 3Ba (Circulation), 4Bb (Conservation & Open Space), 12Ba (Recreation)
Related Programs: 3Bb (Circulation), 3Bc (Circulation), 3Bd (Circulation), 3Be (Circulation), 3Bf (Circulation), 3Bh (Circulation), 3bi (Circulation), 3Bj (Circulation), 3Bk (Circulation), 3Bl (Circulation), 3Ce (Circulation), 3Cf (Circulation), 4Bc (Conservation and Open Space), 4Bd (Conservation and Open Space), 12Bb (Recreation), 12Bc (Recreation), 12Bd (Recreation), 12Be (Recreation), 12Bf (Recreation), 12Bh (Recreation), 12Bi (Recreation), 12Cc (Recreation), 12De (Recreation)

9.A.g **Implement the City's *Low-Impact Modes of Transportation Plan***

Implement the city's *Low-Impact Modes of Transportation Plan* identifying specific locations and routes planned for sidewalks, bicycle lanes and low-speed vehicle paths based on the plan included in **Appendices 3E** and **12A**. The plan should integrate with the Calaveras County Master Bikeway Plan (**Appendices 3E** and **12A**) and emphasize connections between residential, commercial, recreational and public facilities within the city. The plan also should incorporate the findings of the City of Angels sidewalk study and target sidewalk gaps identified in that study.

Equivalent program: 3Bb (Circulation), 3Ce (Circulation), 4Bc (Conservation and Open Space), 12Bb (Parks & Recreation)

Related Programs: 1Dc (Land Use), 3Ba (Circulation), 3Bc (Circulation), 3Bd (Circulation), 3Be (Circulation), 3Bf (Circulation), 3Bh (Circulation), 3Bi (Circulation), 3Bj (Circulation), 3Bk (Circulation), 3Bl (Circulation), 3Cf (Circulation), 4Bb (Conservation and Open Space), 4Bd (Conservation and Open Space), 12Ba (Recreation), 12Bc (Recreation), 12Bd (Recreation), 12Be (Recreation), 12Bf (Recreation), 12Bh (Recreation), 12Bi (Recreation), 12Cc (Recreation), 12De (Recreation)

9.A.h **Continue to Support & Promote Alternatives to Open Burning for Biomass Disposal**

Continue to support and promote alternatives to open burning of yard debris and construction clearing. Efforts should include, but are not limited to:

a. Supporting the efforts of the Calaveras Foothills Fire Safe Council including providing letters and resolutions of support for grant applications made by the council to continue door-to-door chipping services

b. Promoting the efforts of the Calaveras Foothills Fire Safe Council by providing a link to the agency through the city website and/or assisting the council in creating a page on the city's website to promote the availability of its programs

c. Supporting efforts to maintain a biomass disposal site near the city (e.g., Red Hills Road facility)

d. Continuing to seek grant funding and/or the use of contracting services for biomass disposal activities within the city limits

e. Continuing, as feasible, twice-yearly yard waste pick-up and the use of mulched yard debris for city landscaping projects

Equivalent Program: 4Be (Conservation & Open Space)
Related Program: 9Ao (Air Quality)

9.A.i **Facilitate an Air Quality Demonstration Show**

Consider partnering with the local Resource Conservation District (RCD) to acquire US Department of Agriculture Natural Resource Conservation Service Environmental Quality Incentives Program (EQIP) funding to sponsor an Air Quality Demonstration Show utilizing area merchants and local, state and federal agencies to provide demonstrations of equipment and materials that facilitate the use of alternatives to open-burning for biomass disposal. Demonstrations may include alternative dust control methods, chipping/ brushing and shredding, low emission yard and garden equipment (e.g., biodiesel), electric vehicles, and use and sale of wood chip products.

9.A.j **Participate in and Support Regional Air Quality Planning Efforts**

Provide representation from Angels Camp at regional planning events that address the issues and opportunities available for effective air quality management. Participate in planning efforts to prepare and implement a regional Air Quality Plan. Support cost-effective multi-use modeling and Geographic Information System (GIS) technology to accurately measure air quality parameters.

9.A.k **Pursue Partnerships to Secure Funding to Assist in Attaining State and Federal Air Quality Standards**

Pursue partnerships with private and public agencies to pursue Community Development Block Grants and similar funding for residential rehabilitation programs that improve air quality by reducing emissions through the installation of EPA-Certified heating devices or that repair or replace existing heating units as necessary to achieve EPA air quality standards.

9.A.l **Support Actions to Reduce Air Pollution in Source/Producer Regions**

Recognize that degraded air is transported to the foothills from sources located outside of the county. Support legislation to reduce and/or control air emissions in those areas (e.g., the San Joaquin Valley) that are primary producers of emissions transported to Calaveras County.

9.A.m **Investigate a City Street Tree Program**

Investigate establishing a city Street Tree Program that considers at least the following elements:

a. Funding sources for long-term maintenance

b. Identification of streets and highways subject to the city Street Tree Program

c. Tree varieties with suitable growth patterns, that are easily maintained, minimize potential root damage to sidewalks and other infrastructure and avoid risks to health and safety

d. Participation by new development located along streets and highways included in the program

e. Working with local non-profit agencies, service clubs and other volunteer organizations to assist with plantings and/or maintenance

f. Membership in Tree City, USA and potential publicity that such participation might generate

Equivalent Programs: 4Cb (Conservation & Open Space), 11Bf (Community Identity)
Related Programs: 1Ed (Land Use), 9An (Air Quality), 11Bh (Community Identity)

9.A.n **Consider a Tree Management Program**

Work with the community to develop a heritage tree program addressing the conservation of landmark trees within the city limits and including provisions for health and safety should such trees become hazards. Consider including trees of exceptional size, trees important in the history of Angels Camp, trees representing the oldest of their kind or similar unique attributes as heritage trees. Consider a voluntary program in which residents may enroll heritage trees with recognition by the city. In addition, consider providing information at the City of Angels Community Development Department counter regarding best construction practices around oaks and other tree management guidelines.

Equivalent Programs: 4Cc (Conservation & Open Space), 11Be (Community Identity)
Related Program: 9Am (Air Quality)

9.A.o **Support Existing Burning Regulations**

Continue to reduce air emissions and increase public safety though local enforcement activities emphasizing control of illegal burning.

Related programs: 4Be (Conservation & Open Space), 9Ah (Air Quality)

9.A.p **Support Air Quality Monitoring Efforts in and Near the City**

Encourage the county to locate an air monitoring site within the city limits, should funding become available. Support funding requests or similar efforts from local organizations (e.g., community groups, schools) to implement volunteer air quality monitoring programs within the city.